

# Building scheme for -LIT



1. Periodic Building Unit – 2. Connection mode – 3. Projections of the unit cell content
4. Channels and/or cages – 5. Supplementary information

## 1. Periodic Building Unit:

-LIT can be built using units of 12 T atoms. The T12-unit consists of a 3-fold (1,2,3)-connected double 6-ring (D6R; bold in Figure 1(left)). A one-dimensional Periodic Building Unit (PerBU) is obtained when T12-units, related by pure translations along  $b$ , are connected in such a way that two crankshaft chains and additional (fused) 4-rings are formed (bold in Figure 1 (right)). Each crankshaft chain bears two independent terminal oxygen atoms. The repeat distance along a crankshaft chain varies between 8.4-9.9 Å. [Compare the connection of the D6R in -LIT with those in [AFI](#), [ATT](#), [ATV](#), [AWO](#), and [UEI](#); The PerBU can also be built using 4-[1,1], or 4-2 units]

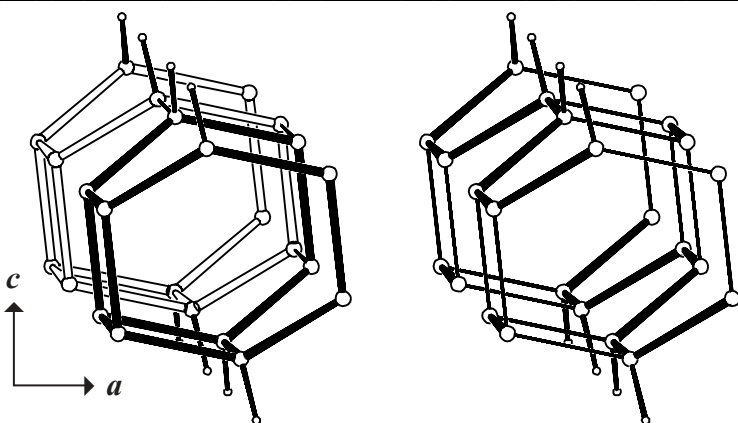


Figure 1. PerBU constructed from 3-fold connected double 6-rings (left) or from two crankshaft chains and dimers (right; see [Alternative description](#)). Terminal oxygen atoms are indicated by bold bonded small circles. ▲

## 2. Connection mode:

Neighboring PerBUs, related by a rotation of 180° about  $a$  and a shift of  $\frac{1}{2}c$ , are connected through crankshaft chains as shown in Figure 2.

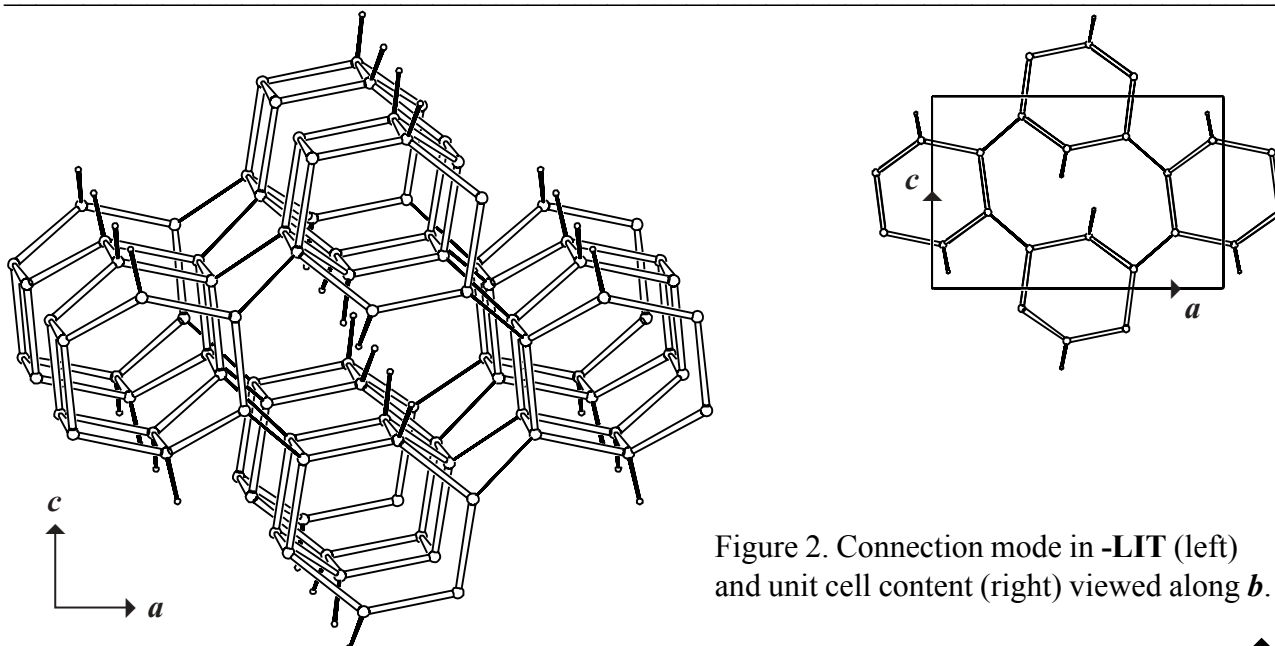


Figure 2. Connection mode in -LIT (left) and unit cell content (right) viewed along  $b$ . ▲

3. Projections of the unit cell content: See Figure 2. ▲

#### 4. Channels and/or cages:

One of the non-interconnecting 10-ring channels in **-LIT**, parallel to **b**, is shown in Figure 4. The **pore descriptor** is added in the Figure.

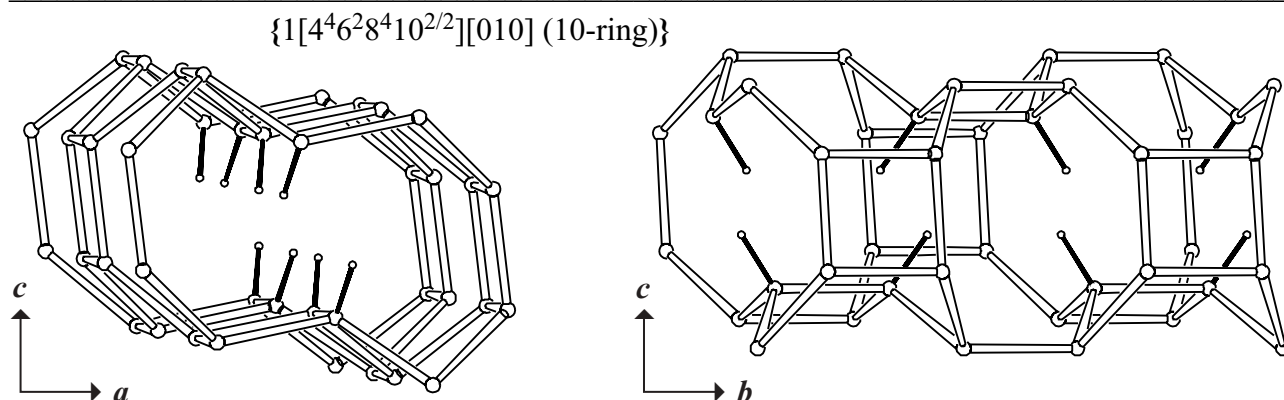


Figure 3. 10-Ring channel in **-LIT**. The terminal oxygen atoms (bold bonded small circles) seriously hamper the diffusion through the channel. ▲

#### 5. Supplementary information:

##### ***Other framework types containing (modified) double 6-rings (D6Rs)***

Several framework types, like **-LIT**, can be built using (modified) D6Rs (see Figure 1).

In the **INTRO** pages links are given to descriptions of other framework types containing (modified) D6Rs (choose: **Double 6-rings**). There is also a link provided to a summary of the Periodic Building Units used in the building schemes of these framework types (choose: **Appendix; Figure 7**).

##### ***Alternative description of -LIT using crankshaft chains***

In several framework types, like in **-LIT**, at least one of the unit cell dimensions is between 8.4 and 9.9 Å. In many cases this indicates the presence of crankshaft chains.

In the **INTRO** pages links are given to detailed descriptions of these framework types (choose: **Crankshaft chains**). There is also a link provided to a summary of the Periodic Building Units used in the building schemes of these framework types (choose: **Appendix; Figure 3**). ▲